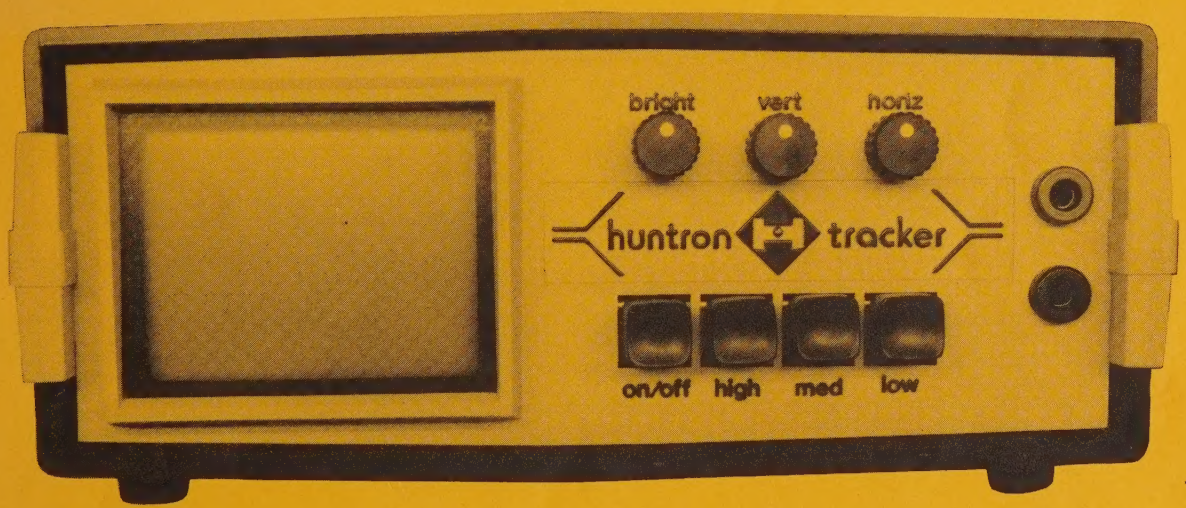
CALIBRATION COPY

MS-7 (3-86)

MAINTENANCE MANUAL

HUNTRON TRACKER



MODEL HTR 1005 B
MODEL HTR 1005 B E
MODEL HTR 1005 B J

INCLUDES OLDER SERIAL NOMBERS

Huntron Instruments, Inc. 15123 Pacific Highway North Lynnwood, WA 98036 (206) 743-3171

1-800-426-9265
TECH REP: DAN BELL

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HUNTRON INSTRUMENTS, INC.

15123 Highway #99, North

Lynnwood, WA. 98036

206-743-3171

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HUNTRON TRACKER

INITIAL CHECK PROCEDURE

1. Remove test probes attached to front of handle.
2. Plug power cord into PROPER A.C. supply.
3. Push ON button. Red light in center of Huntron name should light.
4. Adjust brightness control to mid-point in range.
5. Adjust horizontal and vertical centering controls to mid-point in range. Scope display should be visible on the face of the CRT.

   With the unit ON, the scope display will be as follows:

   LOW button actuated - Diagonal line.

   MED button actuated - Horizontal line.

   HIGH button actuated - Horizontal line.
6. Insert probe banana plugs:

   RED plug in RED socket on front panel

   BLACK plug in BLACK socket on front panel
7. Perform SHORT test:

   FIRST— extend the steel working point of the probe to desired length. Hold the body of the probe in right hand with point away from body. Grasp plastic tip of the probe just ahead of the collar and turn it clock-wise to release lock. Push electrode forward by using the flex wire lead at rear of probe body. Re-set lock by turning the probe tip in a counter-clock-wise direction.

   NOTE— The length of the electrode is coated with an insulative material that offers 1 KV protection to the user. The short test may only be carried out by touching the sharpened portion of the electrodes together.

   SECOND— A valid short test will result in a vertical line on the CRT display in ALL THREE IMPEDANCE RANGES - LOW, MED AND HIGH.

TESTING MAY NOW COMMENCE IN ACCORDANCE WITH THE INSTRUCTIONS FOUND IN THE OPERATING MANUAL AND THE SUPPLEMENTARY PUBLICATION, PROBING.

MAINTENANCE

A regular program of simple maintenance will prolong the working life and appearance of this test unit.

1. DO NOT leave the non-test image on the CRT for extended periods of time. This will result in permanent etching of the trace pattern on the tube coating.

   TURN BRIGHTNESS CONTROL DOWN IF THE UNIT IS NOT TO BE USED FOR SEVERAL MINUTES AND YOU DO NOT WISH TO TURN THE POWER OFF.
2. Switch contacts may require cleaning occasionally. This can be done with and standard TV tuner lubricant such as LPS-2.
3. Case and lens will hold a first class appearance if cleaned from time to time with a sponge and mild detergent solution. Dry and buff with a soft cloth for a lustre finish.

DIS-ASSEMBLY FOR INTERNAL ACCESS

THE FOLLOWING STEPS SHOULD BE FOLLOWED IF ACCESS TO THE INTERIOR OF THE HUNTRON TRACKER IS REQUIRED FOR FIELD REPAIR OF COMPONENTS OR TO ADJUST THE DISPLAY TRIMMERS.

POWER SELECT SWITCH IS ALSO REACHED IN THIS MANNER TO SET 220/240 VOLT UNITS TO PROPER SETTING.

1. UN-PLUG TEST UNIT FROM POWER SOURCE!
2. Place unit on it's back so that the four small feet are pointed upward.
3. Remove the four case closure screws (01-1019) that you will find inside the recessed centers of the four instrument feet.

4. Place closure screws and feet where they will not become lost.
5. CAREFULLY turn unit over to it's normal operating position.
6. Top can now be removed from the side panels by pulling the two apart gently, working at each of the four corners alternately until the top comes free from the side panels.

   FIT TOLERANCES ON THE CASE ARE QUITE CLOSE, SO PATIENCE IS SUGGESTED IN PLACE OF FORCE.

   PLEASE NOTICE THAT THE TOP FEEDS INTO A SLOT IN THE SIDE PANEL . . . WHILE THE FRONT AND BACK PANELS EACH SEAT IN A SHALLOW GROOVE IN THE TOP SECTION . . . THESE ALIGNMENTS MUST BE CORRECT IF THE CASE IS TO BE RE-ASSEMBLED IN A PROPER MANNER.

INTERNAL CONTROL ADJUSTMENTS

A. FOCUS AND ASTIGMATISM

Controls: Focus R-44
Astigmatism control R-42
REFER TO INTERNAL LAYOUT - PAGE 6

To adjust the focus and astigmatism:

1. Turn unit ON.
2. Push MED button in.
3. Place a known good diode across the test leads with clips.
4. Alternately adjust focus and astigmatism controls for sharpest line in both horizontal and vertical directions.

B. HORIZONTAL AND VERTICAL DEFLECTION

Controls: HIGH R-3, R-7
MED R-9, R-13
LOW R-19, R-21
REFER TO INTERNAL LAYOUT - PAGE 6

To adjust for vertical and horizontal scope response in the three impedence positions:

1. HIGH — With test leads OPEN, adjust R-7 for full horizontal deflection. With test leads SHORTED, adjust R-3 for full vertical deflection.
2. MED — With test leads OPEN, adjust R-13 for full horizontal deflection. With test leads SHORTED, adjust R-9 for full vertical deflection.
3. LOW - With test leads OPEN, adjust R-19 and R-21 alternately to obtain a 45 degree diagonal line on the scope.

C. CRT ADJUST

Controls: Tilt R-61
90 degree adjust R-62
REFER TO INTERNAL LAYOUT - PAGE 6

To adjust for display "tilt":

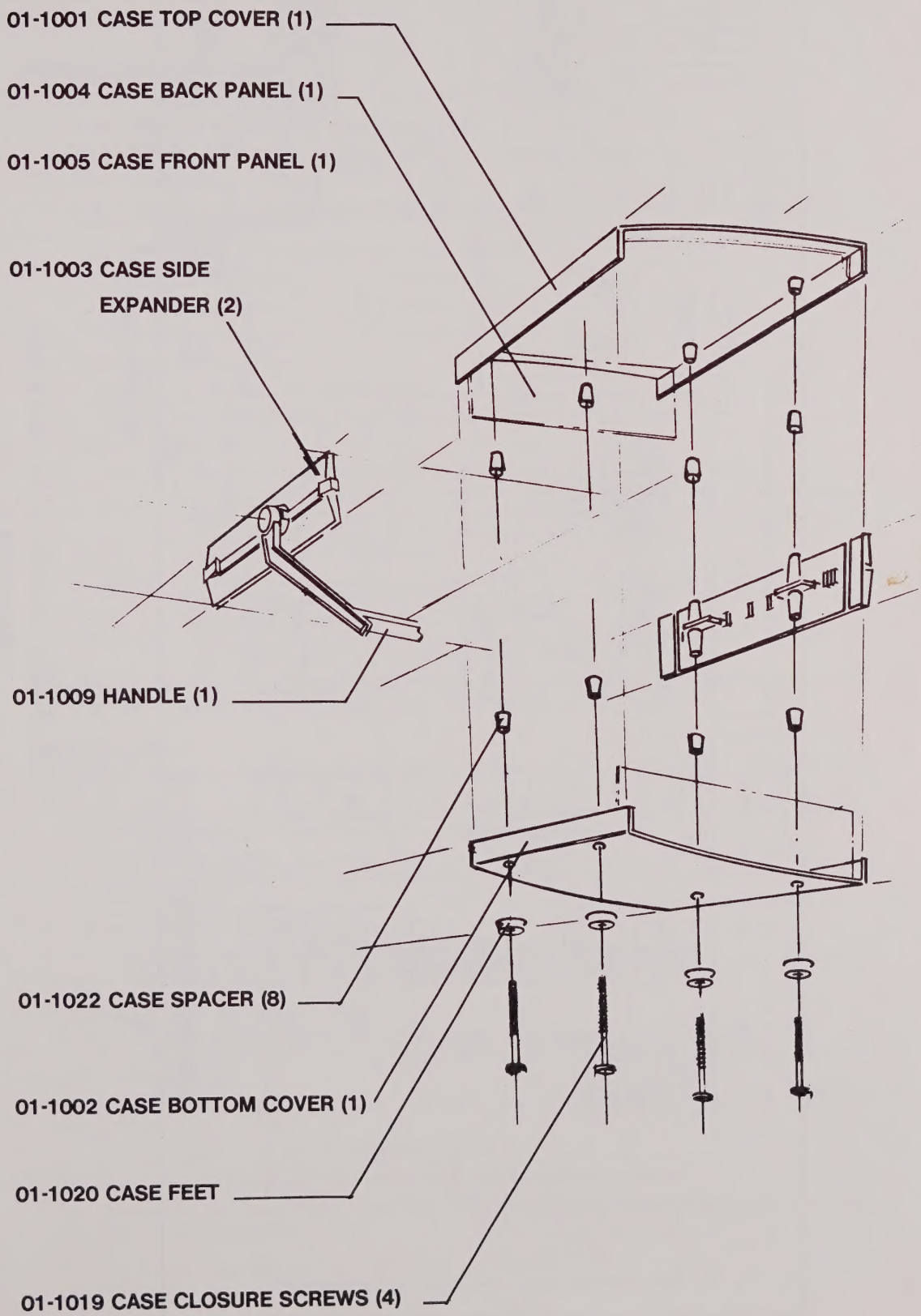
With test leads OPEN and the unit in the HIGH or MED positions, adjust R-61 to achieve a straight and horizontal line.

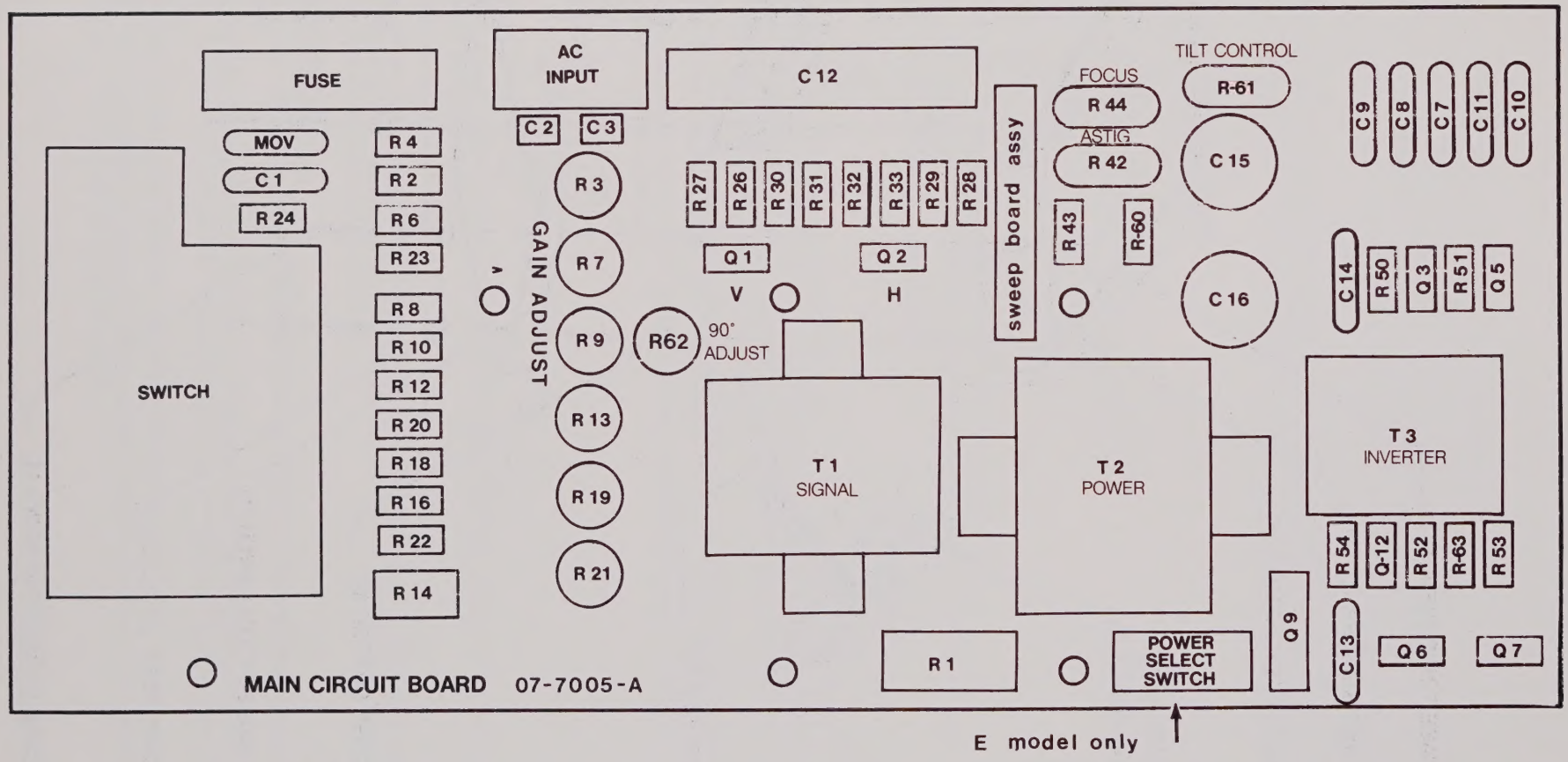
To adjust for 90 degree display:

Clip a known good diode across the test leads. With the unit in HIGH or MED positions adjust the display as closely as possible to a 90 degree format. You will note the angle presented can range from 65 degrees to about 120 degrees.

RE-ASSEMBLY-POWER OFF!!!

1. Place top so that is will feed into side panel slots making sure front/rear panels enter proper grooves.
2. Apply UNIFORM pressure to the top to seat it in side panels. It should enter side panels about ¼". Be sure that front/rear panels have seated in grooves provided on the under-side of the top section.
3. CAREFULLY TURN CASE OVER and replace four feet and closure screws.
4. Return unit to operational position, connect power and run through initial check procedure to be sure unit is fully aligned and ready to operate.


01-1001 CASE TOP COVER (1)
01-1004 CASE BACK PANEL (1)
01-1005 CASE FRONT PANEL (1)
01-1003 CASE SIDE EXPANDER (2)
01-1009 HANDLE (1)
01-1022 CASE SPACER (8)
01-1002 CASE BOTTOM COVER (1)
01-1020 CASE FEET
01-1019 CASE CLOSURE SCREWS (4)



07-7499 MAIN P.C. BOARD ASSEMBLY

HUNTRON TRACKER

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LOW R-19, R-21
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REFER TO INTERNAL LAYOUT - PAGE 6

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4. Return unit to operational position, connect power and run through initial check procedure to be sure unit is fully aligned and ready to operate.

PARTS LIST

PART NUMBER SEQUENCE

PART NUMBER	PART NAME	PART NOMENCLATURE	SCHEMATIC-DRAWING REFERENCES
01-1089	Case assembly complete		Exploded view drawings
01-1001	Case top cover		" "
01-1002	Case bottom cover		" "
01-1003	Case side expander		" "
01-1004	Case rear panel		" "
01-1005	Case front panel		" "
01-1009	Case handle		" "
01-1010	Case handle cap		" "
01-1019	Case closure screws		" "
01-1022	Case spacers		" "
01-1020	Case feet		" "
01-1037	Warranty card		
01-1039	Operating manual		
01-1040	PROBING-Series One		
01-1041	Maintenance Manual		
02-2000	Resistor	10 Ohm 1 Watt	R-14
02-2001	Resistor	68 Ohm ½ Watt	R-52, R-53
02-2003	Resistor	220 Ohm ½ Watt	R-16, R-55,
02-2004	Resistor	1 K Ohm ½ Watt	R-31, R-32
02-2006	Resistor	3.3K Ohm ½ Watt	Obsolete
02-2007	Resistor	4.7K Ohm ½ Watt	R-46 OBSOLETE
02-2008	Resistor	6 K Ohm 5 Watt	R-1
02-2009	Resistor	10 K Ohm ½ Watt	R-51
02-2010	Resistor	18 K Ohm ½ Watt	R-4, R-10, R-46
02-2011	Resistor	22 K Ohm ½ Watt	R-18, R-20, R-27, R-28
02-2013	Resistor	47 K Ohm ½ Watt	R-45
02-2017	Resistor	100 K Ohm ½ Watt	R-12, R-22, R-23, R-36, R-50
02-2018	Resistor	180 K Ohm ½ Watt	R-30, R-33
02-2020	Resistor	330 K Ohm ½ Watt	R-25 OBSOLETE
02-2021	Resistor	470 K Ohm ½ Watt	R-34, R-35, R-38, R-39, R-6
02-2022	Resistor	680 K Ohm ½ Watt	R-6, OBSOLETE
02-2024	Resistor	1 M Ohm ½ Watt	R-8, R-43
02-2025	Resistor	1.5 M Ohm ½ Watt	R-49
02-2026	Resistor	2.2 M Ohm ½ Watt	R-24, R-48
02-2028	Resistor	3.3 M Ohm ½ Watt	R-2
02-2029	Resistor	3.6 M Ohm ½ Watt	R-26, R-29

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PARTS LIST
PART NUMBER SEQUENCE

PART NUMBER	PART NAME	PART NOMENCLATURE	SCHEMATIC-DRAWING REFERENCES
02-2033	Vert. Mt. Trim Pot.	1 M Ohm	R-42, R-44
02-2034	Horiz.Mt. Trim Pot	1 M Ohm	R-7, R-13, R-19, R-21
02-2035	Horiz.Mt. Trim Pot	5 M Ohm	R-3, R-9
02-2036	Var. control resistor	50 K Ohm ½ Watt	R-47
02-2037	Var. control resistor	500 K Ohm ½ Watt	R-40, R-41
02-2038	MOV Varistor	115 V 10 Watt	MOV (metal oxide varistor)
02-2041	Fuse	¼ AGC	F-1
02-2044	Fuse Clip		F-1
02-2057	Vert. MT. Trim Pot	5 K Ohm ½ Watt	R-61
02-2058	Horiz.Mt. Trim Pot	500 K Ohm ½ Watt	R-62
02-2061	MOV Varistor	250 V (E model units)	MOV (E Model units)
02-2063	Fuse	1/8 amp. 250 Volt	F-1 (E Model units)
02-2062	Resistor	15 K Ohm 1 Watt	R-1 (E Model units)
02-2060	Resistor	1.8 K Ohm ½ Watt	R-54
02-2064	Resistor	5.1 Ohm ½ Watt 5%	R-63, R-60
02-2065	Resistor	5 K Ohm 5 Watt	R-1 (J Model units)
03-3003	Capacitor	.01 Mfd 3KV	C-7
03-3004	Capacitor	.02 Mfd 1KV	C-1, C-8, C-9, C-10
03-3006	Capacitor	.1 Mfd 100V	C-14
03-3007	Capacitor	.1 Mfd 500V	C-11
03-3011	Capacitor	10 Mfd 25V	C-13
03-3012	Capacitor	10 Mfd 450V	C-12
03-3014	Capacitor	470 Mfd 35V	C-15, C-16
03-3015	Capacitor	.001 Mfd 1KV	C-2, C-3
03-3020	Capacitor	1 Mfd 100 V	C-4, C-5
04-4000	Diode	Light emitting diode	Q-10
04-4003	Diode	1000V 1 amp.	Q-12
04-4004	Diode Bridge	100V 1 amp.	Q-9
04-4005	Rectifier, FM-50	5000V 2 amp.	Q-3, Q-5
05-5000	Transistor, MJE 240	80V 4 amp.	Q-6, Q-7
05-5001	Transistor, MJE 340	300V ½ amp.	Q-1, Q-2
05-5002	Regulator	12V 1 amp.	Q-8
05-5003	Transistor, MPS A42	Deflection amplifier	Q-1, Q-2

PARTS LIST

DRAWING REFERENCE SEQUENCE

DWG. REF. NO.	PART NOMENCLATURE	HUNTRON PART NUMBER
R-1	6 K Ohm 5 Watt Resistor	02-2008
R-2	3.3 M Ohm ½ Watt Resistor	02-2028
R-3	5 M Ohm Hor. Mt. Trim Pot.	02-2035
R-4	18 K Ohm ½ Watt Resistor	02-2010
R-5	10 K Ohm ½ Watt Resistor	02-2009
R-6	470 K Ohm ½ Watt Resistor	02-2021
R-7	1 M Ohm Hor. Mt. Trim Pot.	02-2034
R-8	1 M Ohm ½ Watt Resistor	02-2024
R-9	5 M Ohm Hor. Mt. Trim Pot.	02-2035
R-10	18 K Ohm ½ Watt Resistor	02-2010
R-12	100 K Ohm ½ Watt Resistor	02-2017
R-13	1 M Ohm Hor. Mt. Trim Pot.	02-2034
R-14	10 Ohm 1 Watt Resistor	02-2000
R-16	220 Ohm ½ Watt Resistor	02-2003
R-18	22 K Ohm ½ Watt Resistor	02-2011
R-19	1 M Ohm Hor. Mt. Trim Pot.	02-2034
R-20	22 K Ohm ½ Watt Resistor	02-2011
R-21	1 M Ohm Hor. Mt. Trim Pot.	02-2034
R-22	100 K Ohm ½ Watt Resistor	02-2017
R-23	100 K Ohm ½ Watt Resistor	02-2017
R-24	2.2 M Ohm ½ Watt Resistor	02-2026
R-25	330 K Ohm ½ Watt Resistor	02-2020 OBSOLETE
R-26	3.6 M Ohm ½ Watt Resistor	02-2029
R-27	22 K Ohm ½ Watt Resistor	02-2011
R-28	22 K Ohm ½ Watt Resistor	02-2011
R-29	3.6 M Ohm ½ Watt Resistor	02-2029
R-30	180 K Ohm ½ Watt Resistor	02-2018
R-31	1 K Ohm ½ Watt Resistor	02-2004
R-32	1 K Ohm ½ Watt Resistor	02-2004
R-33	180 K Ohm ½ Watt Resistor	02-2018
R-34	470 K Ohm ½ Watt Resistor	02-2021
R-35	470 K Ohm ½ Watt Resistor	02-2021
R-36	100 K Ohm ½ Watt Resistor	02-2017
R-38	470 K Ohm ½ Watt Resistor	02-2021
R-39	470 K Ohm ½ Watt Resistor	02-2021
R-40	500 K Ohm ½ Watt Resistor-Var. Ctr.	02-2037
R-41	500 K Ohm ½ Watt Resistor-Var. Ctr.	02-2037

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PARTS LIST

DRAWING REFERENCE SEQUENCE

DWG. REF. NO.	PART NOMENCLATURE					HUNTRON PART NUMBER	
R-42	1	M	Ohm		Vert Mt. Trim Pot.	02-2033	
R-43	1	MEG	Ohm	½ Watt	Resistor	02-2024	
R-44	1	M	Ohm		Vert Mt. Trim Pot.	02-2033	
R-45	47	K	Ohm	½ Watt	Resistor	02-2013	
R-46	18	K	Ohm	½ Watt	Resistor	02-2010	
R-47	50	K	Ohm	½ Watt	Resistor-Var. Ctr.	02-2036	
R-48	2.2	M	Ohm	½ Watt	Resistor	02-2026	
R-49	1.5	M	Ohm	½ Watt	Resistor	02-2025	
R-50	100	K	Ohm	½ Watt	Resistor	02-2017	
R-51	10	K	Ohm	½ Watt	Resistor	02-2009	
R-52	68		Ohm	½ Watt	Resistor	02-2001	
R-53	68		Ohm	½ Watt	Resistor	02-2001	
R-54	1.8	K	Ohm	½ Watt	Resistor	02-2060	
R-55	220		Ohm	½ Watt	Resistor	02-2003	
R-60	5.1		Ohm	½ Watt	Resistor	02-2064	
R-61	5	K	Ohm	½ Watt	Vert Mt. Trim Pot.	02-2057	
R-62	500	K	Ohm	½ Watt	Hor. Mt. Trim Pot.	02-2058	
R-63	5.1		Ohm	½ Watt	Resistor	02-2064	
MOV	115	V		10 Watt	Varistor-Met. Ox.	02-2038	
FUSE				¼ AGC	Fuse	02-2041	
FUSE	250	V		1/8 AMP	Fuse	02-2063	(E model units)
MOV	250	V			Varistor-Met. Ox.	02-2061	(E model units)
R-1	15	K	Ohm	1 Watt	Resistor	02-2062	(E model units)
R-1	5	K	Ohm	5 Watt	Resistor	02-2065	(J model units)
C-1	.02		Mfd	1 KV	Capacitor	03-3004	
C-2	.001		Mfd	1 KV	Capacitor	03-3015	
C-3	.001		Mfd	1 KV	Capacitor	03-3015	
C-4	1		Mfd	250 V	Capacitor	03-3020	
C-5	1		Mfd	250 V	Capacitor	03-3020	
C-6	.1		Mfd	500 V	Capacitor	03-3007	OBSOLETE
C-7	.01		Mfd	3 KV	Capacitor	03-3003	
C-8	.02		Mfd	1 KV	Capacitor	03-3004	
C-9	.02		Mfd	1 KV	Capacitor	03-3004	
C-10	.02		Mfd	1 KV	Capacitor	03-3004	

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PARTS LIST

DRAWING REFERENCE SEQUENCE

DWG. REF. NO.	PART NOMENCLATURE		HUNTRON PART NUMBER	
C-11	.1 Mfd 500 V	Capacitor	03-3007	
C-12	10 Mfd 450 V	Capacitor	03-3012	
C-13	10 Mfd 25 V	Capacitor	03-3011	
C-14	.1 Mfd 100 V	Capacitor	03-3006	
C-15	470 Mfd 35 V	Capacitor	03-3014	
C-16	470 Mfd 35 V	Capacitor	03-3014	
Q-1	MPS A42	Transistor	05-5003	
Q-2	MPS A42	Transistor	05-5003	
Q-3	2 Amp 5000V	Rectifier-FM-50	04-4005	
Q-5	2 Amp 5000V	Rectifier-FM-50	04-4005	
Q-6	MJE 240	Transistor	05-5000	
Q-7	MJE 240	Transistor	05-5000	
Q-8	1 Amp 12 V	Regulator	05-5002	
Q-9	1 Amp 100 V	Diode bridge	04-4004	
Q-10		Diode-Light emit.	04-4000	
Q-12	1 Amp 1000V	Diode	04-4003	
T-1		Transformer	06-6014	
T-1		Transformer	06-6012	(E Model units)
T-2		Transformer	06-6015	
T-2		Transformer	06-6013	(E Model units)
T-3		Transformer	06-6004	
T-3		Transformer	06-6004	(E Model units)
CRT-1	Toshiba 85DB1	Cathode ray tube	07-7025	
	Main	Circuit board	07-7005-A revised	
	Tube socket	Circuit board	07-7003	
	Control	Circuit board	07-7004	
	Sweep	Circuit board	07-7036	
	A.C. Input	Fixture	07-7010	
S1	Four button	Switch	07-7006	
S2	220-240 V	Switch	07-7052	(E Model units)
L-1		Rotation coil	07-7012	

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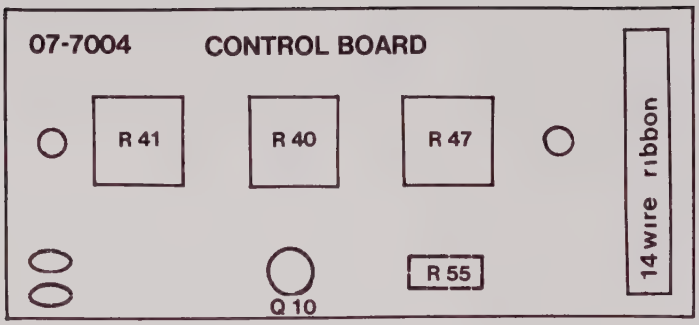
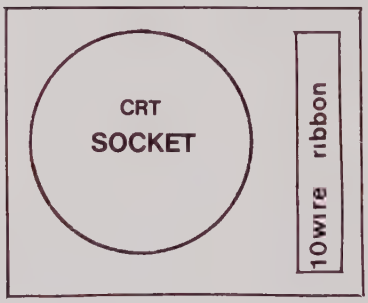
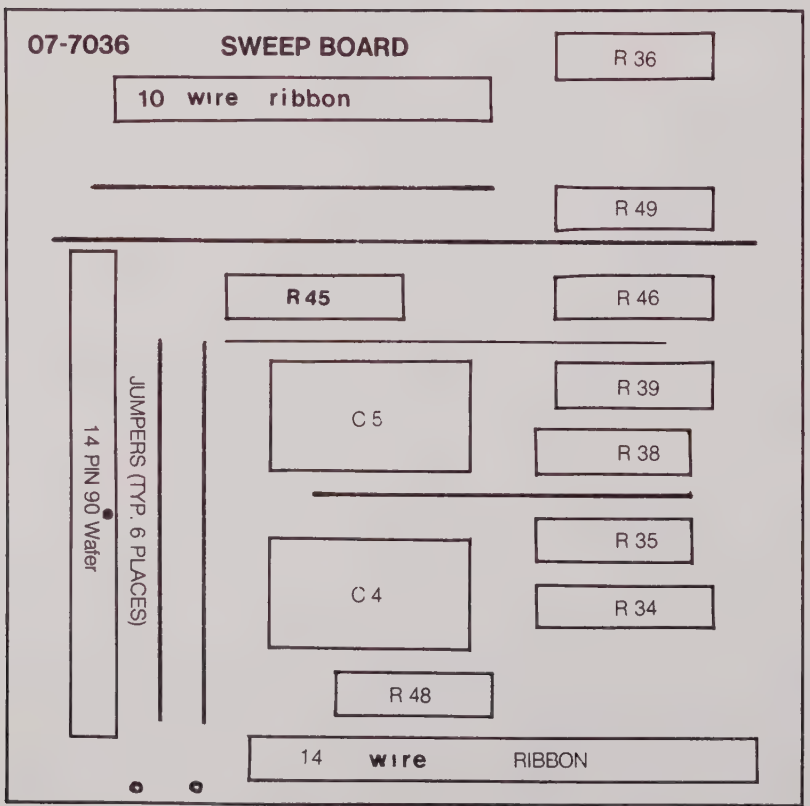


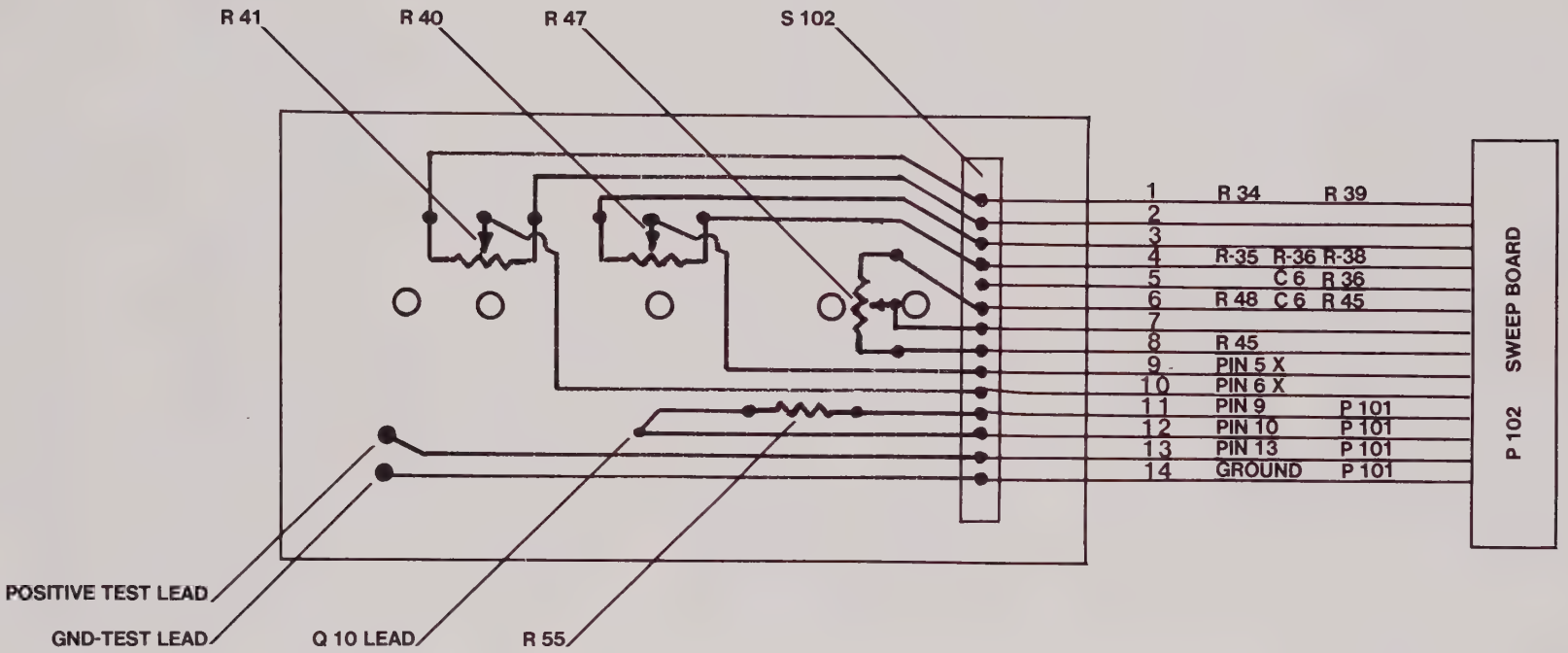
07-7399
CONTROL BOARD ASSY.



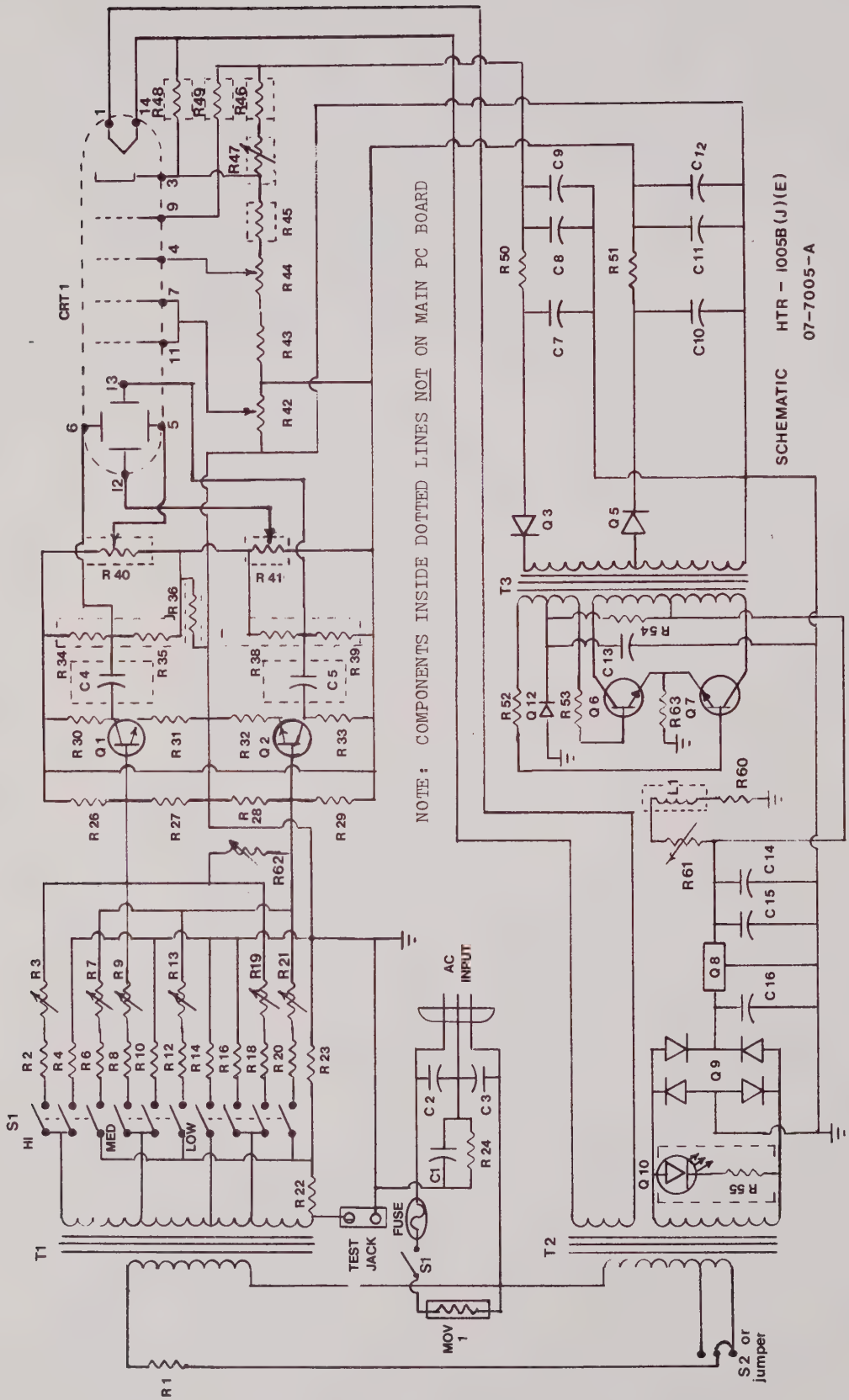
07-7299
CRT SOCKET BOARD
ASSY.



07-7899
SWEEP BOARD
ASSY.



CONTROL BOARD


SCHEMATIC HTR – 1005B(J)(E)
07-7005-A
NOTE: COMPONENTS INSIDE DOTTED LINES NOT ON MAIN PC BOARD
CRT 1
AC INPUT
FUSE
TEST JACK
MOV 1
S2 or jumper
HI
MED
LOW
T1
T2
T3
L1
Q1
Q2
Q3
Q5
Q6
Q7
Q8
Q9
Q10
Q12
R1
R2
R3
R4
R6
R7
R8
R9
R10
R12
R13
R14
R16
R18
R19
R20
R21
R22
R23
R24
R26
R27
R28
R29
R30
R31
R32
R33
R34
R35
R36
R38
R39
R40
R41
R42
R43
R44
R45
R46
R47
R48
R49
R50
R51
R52
R53
R54
R55
R60
R61
R62
R63
C1
C2
C3
C4
C5
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16

PARTS LIST

PART NUMBER SEQUENCE

PART NUMBER	PART NAME	PART NOMENCLATURE	SCHEMATIC-DRAWING REFERENCES
01-1089	Case assembly complete		Exploded view drawings
01-1001	Case top cover		" "
01-1002	Case bottom cover		" "
01-1003	Case side expander		" "
01-1004	Case rear panel		" "
01-1005	Case front panel		" "
01-1009	Case handle		" "
01-1010	Case handle cap		" "
01-1019	Case closure screws		" "
01-1022	Case spacers		" "
01-1020	Case feet		" "
01-1037	Warranty card		
01-1039	Operating manual		
01-1040	PROBING-Series One		
01-1041	Maintenance Manual		
02-2000	Resistor	10 Ohm 1 Watt	R-14
02-2001	Resistor	68 Ohm ½ Watt	R-52, R-53
02-2003	Resistor	220 Ohm ½ Watt	R-16, R-55,
02-2004	Resistor	1 K Ohm ½ Watt	R-31, R-32
02-2006	Resistor	3.3K Ohm ½ Watt	Obsolete
02-2007	Resistor	4.7K Ohm ½ Watt	R-46 OBSOLETE
02-2008	Resistor	6 K Ohm 5 Watt	R-1
02-2009	Resistor	10 K Ohm ½ Watt	R-51
02-2010	Resistor	18 K Ohm ½ Watt	R-4, R-10, R-46
02-2011	Resistor	22 K Ohm ½ Watt	R-18, R-20, R-27, R-28
02-2013	Resistor	47 K Ohm ½ Watt	R-45
02-2017	Resistor	100 K Ohm ½ Watt	R-12, R-22, R-23, R-36, R-50
02-2018	Resistor	180 K Ohm ½ Watt	R-30, R-33
02-2020	Resistor	330 K Ohm ½ Watt	R-25 OBSOLETE
02-2021	Resistor	470 K Ohm ½ Watt	R-34, R-35, R-38, R-39, R-6
02-2022	Resistor	680 K Ohm ½ Watt	R-6, OBSOLETE
02-2024	Resistor	1 M Ohm ½ Watt	R-8, R-43
02-2025	Resistor	1.5 M Ohm ½ Watt	R-49
02-2026	Resistor	2.2 M Ohm ½ Watt	R-24, R-48
02-2028	Resistor	3.3 M Ohm ½ Watt	R-2
02-2029	Resistor	3.6 M Ohm ½ Watt	R-26, R-29

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PARTS LIST
PART NUMBER SEQUENCE

PART NUMBER	PART NAME	PART NOMENCLATURE	SCHEMATIC-DRAWING REFERENCES
02-2033	Vert. Mt. Trim Pot.	1 M Ohm	R-42, R-44
02-2034	Horiz.Mt. Trim Pot	1 M Ohm	R-7, R-13, R-19, R-21
02-2035	Horiz.Mt. Trim Pot	5 M Ohm	R-3, R-9
02-2036	Var. control resistor	50 K Ohm ½ Watt	R-47
02-2037	Var. control resistor	500 K Ohm ½ Watt	R-40, R-41
02-2038	MOV Varistor	115 V 10 Watt	MOV (metal oxide varistor)
02-2041	Fuse	¼ AGC	F-1
02-2044	Fuse Clip		F-1
02-2057	Vert. MT. Trim Pot	5 K Ohm ½ Watt	R-61
02-2058	Horiz.Mt. Trim Pot	500 K Ohm ½ Watt	R-62
02-2061	MOV Varistor	250 V (E model units)	MOV (E Model units)
02-2063	Fuse	1/8 amp. 250 Volt	F-1 (E Model units)
02-2062	Resistor	15 K Ohm 1 Watt	R-1 (E Model units)
02-2060	Resistor	1.8 K Ohm ½ Watt	R-54
02-2064	Resistor	5.1 Ohm ½ Watt 5%	R-63, R-60
02-2065	Resistor	5 K Ohm 5 Watt	R-1 (J Model units)
03-3003	Capacitor	.01 Mfd 3KV	C-7
03-3004	Capacitor	.02 Mfd 1KV	C-1, C-8, C-9, C-10
03-3006	Capacitor	.1 Mfd 100V	C-14
03-3007	Capacitor	.1 Mfd 500V	C-11
03-3011	Capacitor	10 Mfd 25V	C-13
03-3012	Capacitor	10 Mfd 450V	C-12
03-3014	Capacitor	470 Mfd 35V	C-15, C-16
03-3015	Capacitor	.001 Mfd 1KV	C-2, C-3
03-3020	Capacitor	1 Mfd 100 V	C-4, C-5
04-4000	Diode	Light emitting diode	Q-10
04-4003	Diode	1000V 1 amp.	Q-12
04-4004	Diode Bridge	100V 1 amp.	Q-9
04-4005	Rectifier, FM-50	5000V 2 amp.	Q-3, Q-5
05-5000	Transistor, MJE 240	80V 4 amp.	Q-6, Q-7
05-5001	Transistor, MJE 340	300V ½ amp.	Q-1, Q-2
05-5002	Regulator	12V 1 amp.	Q-8
05-5003	Transistor, MPS A42	Deflection amplifier	Q-1, Q-2

PARTS LIST

PART NUMBER SEQUENCE

PART NUMBER	PART NAME	PART NOMENCLATURE	SCHEMATIC-DRAWING REFERENCES
07-7001	Main PC Board	1005 A	OBSOLETE
07-7002	Control PC Board	1005 A	OBSOLETE
07-7003	Tube socket	1005 B	
07-7004	Control PC Board	1005 B	
07-7005	Main PC Board	1005 B	
07-7006	Switch, S-1	Four button-OFF/LO/MED/HI	
07-7009	Tube socket	1005 B	
07-7010	A.C. input socket		
07-7012	Rotation coil	L-1	
07-7017	Three pin Molex		OBSOLETE
07-7023	Ribbon connector	14 wire X 10 inches	OBSOLETE
07-7025	Oscilloscope tube	Toshiba 85DB1	
07-7027	Ribbon connector	14 wire X 6 inches	OBSOLETE
07-7029	Main board terminal	14 pin-soldered right angle	OBSOLETE
07-7035	CRT socket board	1005 B	
07-7036	Sweep circuit board	1005 B	
07-7039	Wafer assembly	14 pin Molex	
07-7046	Ribbon cable	14 wire X 8 inches	
07-7047	Ribbon cable	10 wire X 6 inches	
10-1099	Micro Probe Assembly	single unit-complete	
10-1001	Micro Probe body	Red	
10-1002	Micro Probe body	Black	
10-1003	Micro Probe tip	Red	
10-1004	Micro Probe tip	Black	
10-1005	Micro Probe electrode	Steel-insulative coating	
10-1010	Micro Probe lead wire	Red X 60 inches	
10-1011	Micro Probe lead wire	Black X 60 inches	
07-7049	Rt. angle header	14 pin, 90 degree wafer	
07-7052	220-240 V Switch	S-2	E Model units

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